

NAVY MEDICINE

January-February 1997



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COVER: Aboard the Space Shuttle *Atlantis* on its first day in orbit, astronaut CAPT Jerry M. Linenger, MC, USN, prepares for his first rest period. A few days into the mission, Linenger transferred to *Mir* to begin 4 months aboard the Russian space station. Story on page 13. NASA photo.



Miracle Babies Have Good Reason to Party

Kids who graduated from the adversities of life are honored in a reunion in NMC's courtyard.

There hasn't been another neonatal intensive care reunion like this one anywhere in San Diego County. In fact, this reunion was perhaps the only one of its kind, where a courtyard celebration with country music and the Ronald McDonald show remembered the past and honored the present.

For the 13th year this past June, numerous people, organizations, and Naval Medical Center (NMC), San Diego, CA, staff members joined together in honoring kids, who graduated from the adversities of life.

Following remarks made by Mike Reber, a retired Navy captain and executive director of the San Diego Armed Services YMCA (cosponsor of the event), and NMC Commander RADM Richard Nelson, MC, the 1-day special event treated dozens of special children (who are more like medical marvels), to entertainment,

activities, food, and, of course, prizes. The youngsters marveled at puppets, magic, and karate demonstrations. Graduate awards were later presented for the longest stay, the greatest distance traveled, and the smallest graduate.

Whether through a premature birth or complications associated with it, a baby is not always a bundle of joy. One hundred and twenty military families know this fate all too well. This reunion was their rite of passage from adversity and a celebration of the triumph that followed.

According to program chairman Debbie Hansen, "This year marked the 13th Annual Neonatal Intensive Care Reunion. The reunion is for children, who as infants were admitted to the naval hospital's neonatal intensive care unit due to life-threatening problems." She explained, "In some cases these complications at birth can

affect the child's development; consequently, many of the children continue to be plagued with ongoing medical problems."

Hansen emphasized, "The families went through a lot of pain and struggles when their child was in the neonatal intensive care unit (NICU). Sometimes there's hopelessness and helplessness. This reunion is a reward. For years you get to see kids who have been terribly sick. Now you see a 5- or 6-year-old who is doing wonderfully. This reunion is a sign of hope."

Hansen is a part-time staff member and volunteer in the Armed Services YMCA Hospital Program. Her husband Eric is a YMCA hospital volunteer. He is also a chief petty officer in the Navy and works at NMC as a disability counselor.

From personal experience the Hansen family knows the pain and

suffering associated with neonatal intensive care very well. Their own son Andy is an NICU graduate. He was a premature baby born in July 1988. In the 26th week of pregnancy, he weighed in at 2 pounds, 3 ounces, and spent 3 months in NICU. According to Hansen, her son is now a robust boy and doing fine. This was her 7th year of chairing the reunion, and the 8th year she served on the committee.

"The reunion is a celebration of life, which many of these children fought so desperately for. Also, it is a unique opportunity for the medical staff to become reacquainted with these special needs," explained Senior Program Director Cherri Barnswell of the San Diego Armed Services YMCA.

Hospital staff member Wanda Elliot, a registered nurse and the NICU reunion founder, agreed, "It's an exciting event where children are recognized and the relationships are renewed. It's a moral booster for the staff members. They have seen a lot of despair and witnessed a lot of bad things happen to children."

Elliot added, "It's such an inspiration for us. We come back and see these children who have survived and exceeded all life expectations. These kids may have gone home with feeding problems. They may have not been growing very well." Elliot has

worked in nursing for 17 years and has worked at NMC for 15 of those years. This is her 13th year of being involved with the NICU reunion.

Since January 1996, according to the Armed Services YMCA, there have been 270 admissions to the NICU. Jay Lynn Black of San Diego

According to Black, the NICU staff provided her son excellent care. "They did an excellent job," she exclaimed. Black added, "I like all the nurses. They were always there to answer any questions I had. They were always there to reassure me. They spent a lot of time with him and made me feel a

lot better. They helped me endure the pain of this experience in a variety of ways. I felt very confident with the total staff and in how they provided for my son's care."

Black noted, "A lot of people praise the unit. 'They say you had your baby in the perfect place.' They really like the attention that their babies have gotten."

Black resides in San Diego, and indicated that her son was trans-



ferred to another hospital in the community for continued medical and nursing care. In a followup she said that he is continuing to thrive and is continually progressing to the point where he'll be able to come home in the near future.

The NICU is staffed by 4 neonatologists, 20 pediatric residents, 64 registered nurses, 16 respiratory technicians, 3 ward clerks, and a variety of support personnel. Providing highly skilled care, they have bettered the lives for thousands of children. □

—Story and photos by Robert Alan Wright, a freelance writer living in La Mesa, CA.

The Art and Challenge of Physician Recruiting

LT Ron Gimbel, MSC, USNR, CHE
CAPT Robert Hufstader, MC, USN

Physician recruiting has been labeled by many as a challenging opportunity and is the top priority in Navy medical recruiting. This article explores the art of successfully recruiting physicians in today's turbulent environment.

Internal Environment

To develop an effective recruiting campaign, one must start with a well-defined staffing plan identifying current and future requirements. In 1996/97 the staffing (or accession plan) is truly a fluid document which is shaped by current work load, the Total Health Care Support Readiness Requirement (THCSRR) and impacted by DOD staffing initiatives, the SECNAV "733 update" study, and the earlier Defense Authorization Act of FY92/93. It is further affected by the Navy's continuing effort to reduce infrastructure ashore, to resize operational units through new construction and decommissioning afloat, as well as the day-to-day realignment of billets through efficiency reviews or other staffing initiatives. These all result in

new billets coming on-line at the same time that others are lost. As TRICARE is implemented worldwide, our distribution and number of billets will probably be further influenced. It is a truly turbulent planning environment.

The current Medical Corps staffing plan represents Navy medicine's "best guess" about staffing requirements taking all of these influences into consideration. The plan is directly tied to the Navy's Graduate Medical Education (GME) Program. As a part of infrastructure reduction, the Surgeon General has limited participation in GME to "no more than 25 percent of Medical Corps endstrength." Recent changes to meet the 25 percent threshold have focused on the number of trainees in fellowships (i.e., subspecialty training) and in some residencies. Of potentially larger impact to recruiting, however, is the further policy that "between 50 percent and 75 percent of endstrength within a specialty will have been trained in Navy residencies." This implies that 25-50 percent will be trained in civilian residencies. Some of these will be Navy physicians assigned to outservice

training, but the remainder trainees must be recruited either from within their training pipeline or as a direct accession from civilian practice.

Currently, Navy medicine recruits physicians through four primary methods which include the Health Professions Scholarship Program (HPSP), Financial Assistance Program (FAP), Recall Program, and Direct Accession Program. In addition, the Uniformed Services University of the Health Sciences (USUHS), Bethesda, MD, enrolls civilian medical students who agree to accept a military commission.

Financial Assistance Program

- Annual Bonus of \$18,770
 - Monthly Stipend of \$886
 - Certain Fees Reimbursed
 - Inactive Ready Reserve Time Counts for Promotion
 - Targeted Specialties
-

External Environment

In response to market-driven healthcare reform and pressure from industry, hospitals and managed care plans are employing record numbers of primary care physicians directly or through group practice acquisition. In fact, over 87 percent of all hospitals, clinics, and managed care organizations are actively recruiting physicians at any one time.(1) To accomplish this mission, organizations are devoting significant resources to the recruiting process and physician compensation/benefit packages. Residents are being targeted 18 months prior to graduation and receive as many as 50 unsolicited telephone calls from civilian organizations and letters per week regarding practice opportunities.(2)

Although medical schools are attempting to expand primary care graduate medical education programs, there are not yet enough graduating residents to fill open positions within the United States. As a result, the demand for primary care physicians far exceeds the supply.

The Challenge

For Navy medicine to succeed in the physician recruitment market, the entire recruiting team must overcome

significant challenges and obstacles. Some of the challenges include:

- **Recruiter Turnover.** Each year, the physician recruiting team experiences a significant turnover in personnel (30-40 percent of medical recruiters in Area ONE/Northeast) due primarily to officers exiting the Navy, transferring or retiring. Many officers ordered to recruiting are line officers on 24- to 36-month tours. Experience indicates that the learning curve for officers unfamiliar with Navy medicine can be as lengthy as 1 year (or 50 percent of tour length).

- **Compensation and Benefits.** According to 1995 physician compensation surveys, the average net income for a family practice provider is \$122,625 and \$204,752 for obstetric/gynecology physicians.(3) Incomes are up significantly since 1990, with as much as a 5 to 9 percent increase each year, depending on specialty. Additionally, negotiated benefit plans with managed care organizations typically include malpractice coverage, administrative support, loan repayment, funded continuing medical education, and 30 days vacation.(4) Many of these benefits were once used by Navy physician recruiters as primary "selling" tools, and have now become a standard in the industry.

- **Competitive Profile.** Navy medicine has always maintained a high-quality standard to support the readiness requirements of a Medical Corps officer. Qualifications such as age, trained specialty (or subspecialty), board certification, and U.S. medical school training significantly reduces the pool of available physicians from which to recruit. Utilizing available data (extracting physicians who do not meet basic criteria) from the total pool of 741,364 physicians practicing nationwide, our potential market is 83,794 physicians or 11 percent of the pool. Unfortunately this number reflects all specialties, including those we don't actively recruit, and must be further reduced by 58 percent to reflect accurately the desired specialty pool of 35,193 or 4.7 percent of the total physician pool. This number represents our potential market for recruiting practicing physicians and residents.(5) It is also the market of prime candidates for most other civilian and military physician recruiters.

- **Relocation Preference.** Geographical preference is perhaps the most significant indicator of where a physician will actually practice. In fact, research indicates that 75 percent of physicians will accept positions because of where the position is located.(6) Often the physician has

some type of direct tie to the community (such as family, attend school, etc.) Hospitals and health system recruiters identify both practice and community profiles and "sell" geographic appeal and quality of life issues.

The Approach

After extensive review of the current recruitment process and strategically analyzing our competition, a multifaceted approach to physician recruitment has been developed. In addition to our traditional approach to generating names of candidates (i.e., direct mail solicitation, on-site visits to GME programs, use of Personnel Recruiting Navy, etc.), the "new" plan includes:

- **In-depth Training.** Specialized physician recruitment training courses are being provided regionally to new recruiters (beyond basic orientation) on advanced principles of physician recruitment. Many recruiters are sent TAD to a private vendor who offers a foundation course which highlights issues in sourcing, interpersonal skills development, planning, screening prospects, compensation and contractual obligations, legal issues, and special topics. Additionally, many recruiters are provided on-site individualized training as followup to the foundation course.

- **Identify Potential Market.** As mentioned previously, Navy medicine maintains a strict qualification criteria for appointment in the Medical Corps. With only 4.7 percent of the overall physician market meeting our basic criteria, recruiters require some mechanism for identifying the best prospects. Several regions have invested in a physician relocation data base service which provides basic criteria and relocation preference of physician residents. Using this strategic information, assets can be efficiently focused on the potential prospects and not "shot-gunned" in every direction.

- **Selling Intangible Benefits.** Although Navy pay in some specialties lags behind the private sector, there has always been more to life in the Navy than money, and these more intangible benefits are effective "selling points" to candidates. Physicians, like others, are motivated by issues such as quality of life, financial stability in a changing healthcare economy, the opportunity to repay mounting medical school and residency training debts, control over their practice, collegial practice environment, and adventure. Successful recruiters do not skirt the operational component of a Navy physician's practice, but highlight operational tours and mobilization as a true

opportunity which does not exist in any other medical practice. Navy medicine provides short-term practice opportunities in places like Bosnia, Somalia, Haiti, Cuba, and other "hot spots" around the globe. Our competitors have nothing similar to offer.

- **Target Specific Opportunities.** As mentioned previously, research indicates that physicians relocate to geographic areas of choice (usually where the physician or spouse has some tie to the community). In response, recruiters and detailer are working together to identify outstanding open billets and market specific opportunities. Physician and community profiles are being developed for use by the recruiters to sell specific aspects of the practice opportunity. From the profiles, targeted advertis-

The Approach

- In-depth Training
 - Identifying Potential Markets
 - Selling Intangible Benefits
 - Target Opportunities
 - On-site Visits and Medical Staff Support
 - Physician Support
 - Contracting Physicians Early in Training Pipeline
 - Navy Physicians as Speakers
-
-

ing is being developed and placed in professional journals and career opportunity newspapers to attract interested prospects. Another specific opportunity Navy practice offers is the chance for a civilian physician to enter operational medicine in midcareer, and even on occasion to obtain GME thereafter.

- **On-site Visits and Medical Staff Support.** In conjunction with the development of practice and community profiles, medical commands are being solicited for direct support in the recruitment process. Once a prospect becomes a qualified applicant (appears to meet all qualifications), and has a solid interest in a specific opportunity, an on-site visit is coordinated between the recruiter and the MTF liaison. The physician then has the oppor-

tunity to tour the facility, meet his/her potential colleagues, meet the local commanding officer, and tour the community. Working as a team, the recruiting and MTF staffs screen the applicant and "sell" the specific position.

- **Physician Followup/Support.** To successfully match a physician with a Navy opportunity, a recruiter has to do more than just access him/her. Research indicates that "satisfied" physicians are usually easier to retain in an organization and perform at peak levels. Anything a recruiter can do to ensure that a physician is prepared for the Navy transition and practice environment will usually be positively received and increase the chances of a successful match. The higher the retention in Navy medicine, the lower out-year physician recruiting goals will be.

- **Contracting Physicians Early Using the FAP Program.** Research has demonstrated that, with the exception of the HPSP, the "prime" opportunity to contract with physicians who have already been accepted into a civilian residency is during their fourth year of medical school through the FAP. By contracting early, the physicians receive full FAP financial benefits during training which can be used to significantly reduce their medical school debt prior to entering active duty. The reassurance this benefit provides to the young physician and to the physician's family is inestimable.

- **Navy Physicians as Speakers.** For the physician recruiter, gaining access to medical students and residents can be difficult. Perhaps the most effective method for increasing awareness of opportunities in the Medical Corps is bringing Navy physicians into GME programs and medical schools. Navy physicians can provide both testimonial presentations and professional presentations to students and residents.

Although there is no single panacea in physician recruitment, the odds of success can be enhanced if recruiters capitalize on identified opportunities. Physician recruitment is a top priority in Navy Recruiting and will only become more difficult as healthcare reform and managed care continues to drive the healthcare market.

What Can the Navy Physician Do?

- First and foremost, you are always a representative of Navy medicine, and as such you can have real personal impact as a "recruiter by example" both on and off duty.

- Wear your uniform at professional meetings. Speak with other physicians there about your practice. Be

attuned during these conversations for the informal but interested question.

- Be active in your professional society, and let it be known that you are a member of the Navy's Medical Corps.

- Offer your services as a part of the Medical Corps Speakers' Bureau. Contact CAPT Bill Wurzell (MED-OOMCB4) at 202-762-3069. Recruiting Command will fund speaking engagements.

- Point out two important facts about Navy medicine whenever you have the opportunity: First, security for self and family while experiencing the opportunity to live in different locations around the country or the world and serving in different positions. Second, adventure! This is perhaps the oldest reason for joining the military. It worked in John Paul Jones' time and it will work for you today.

- Contact your local Navy physician recruiter or Navy Recruiting Command at 703-696-4926 to offer your services at the Navy booth at your professional society's meeting. The Recruiting Command may even be able to provide funding to subsidize your trip.

- Speak with medical students and residents you know about the advantages of the HPSP and FAP. Contact your local physician recruiter or Recruiting Command to pass along information on interested candidates.

- Speak with established physicians who may be looking for a change of pace. Be sure to point out the exciting opportunities flight surgery, shipboard assignments, and undersea medicine can offer to experienced physicians.

- Have fun in your own career. You and what you do are the very best recruiting tools of all.

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Mobile Platelet Pheresis

LCDR Stewart W. Comer, MC, USNR

Historically, new and emerging medical technologies have largely been confined to major medical centers. Advances in integrated circuit electronics and progressively intricate bioengineering have diminished both the cost and size of machines and thus increas-

ingly provided greater access of sophisticated technology to a broader spectrum of medical facilities. This accelerated assimilation has been realized by incorporating relatively inexpensive, more modularized units capable of performing an impressive array of complex functions.

Platelet pheresis has evolved accordingly from the large, stationary units of the late 1970's designed for and largely confined to regional medical centers, toward the more physically compact yet technologically sophisticated mobile units of the early 1990's. This transition has allowed

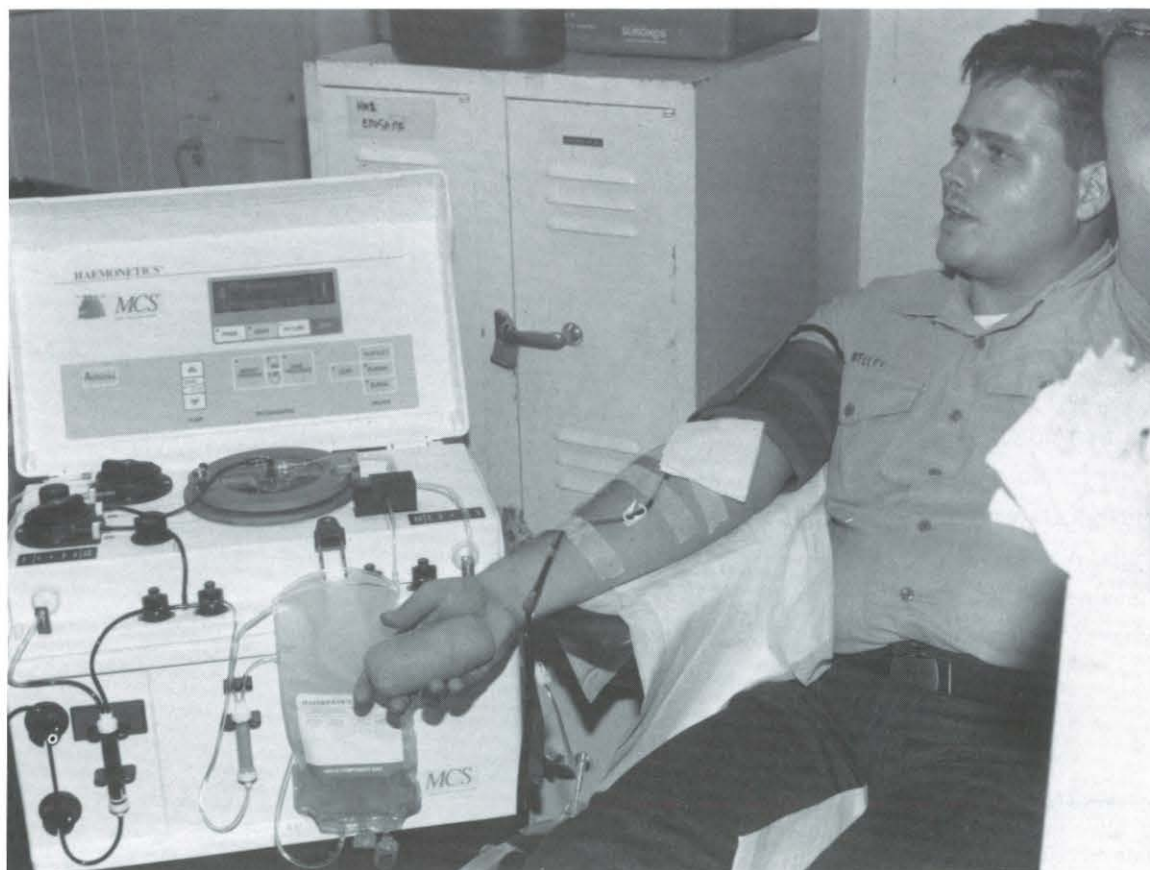


Figure 1. HM2 Benjamin Kelley undergoing platelet pheresis aboard USS *Holland*. Note the comparative size of the machine in relation to the lockers in the background.

small hospitals and mobile military medical units the opportunity to offer this critical care service.

In early 1995 the Blood Donor Center at U.S. Naval Hospital Guam began initial development of a mobile platelet pheresis program using the Haemonetics MCS™ platelet pheresis machine. This unit which measures 21.5 x 17 x 12 inches and weighs approximately 56 pounds is self-contained and designed for ease of mobility. The compact dimensions of this machine provides significant flexibility and is ideally suited to a variety of different venues including shipboard use as shown in Figure 1.

The ability to support routine transfusion needs as well as level I trauma has been repeatedly demonstrated at our facility. On 1 Feb 1996, the machine was transported to USS *Holland* (AS-32), a submarine tender stationed at Guam, where the first platelet pheresis was performed aboard a naval vessel. The entire procedure from initial setup to packout transpired in less than 3 hours and was performed in physically confined spaces as shown in Figure 2.

The need for platelets in post-trauma and perioperative care is well recognized.(1,2) Except for large medical centers which operate platelet pheresis programs, platelets can only be derived from single unit concentrates produced as a component

product from each unit of whole blood donation.

The plasma and platelets are separated by centrifugation from packed red blood cells. Approximately 75 percent of the recovered platelets are suspended in a small amount of plasma and constitute a single unit of platelets. This unit is admixed with other single unit concentrates, each from separate donors, to yield a transfusable entity traditionally referred to as a "six pack." Thus a "six pack" of platelets constitutes a random combination of six separate donors.

The process of platelet pheresis, in contrast, selectively withdraws platelets and returns red blood cells and plasma to the donor. A six pack of platelets generated by platelet pheresis thereby reduces the number of donors

to whom a recipient is exposed to from 6 to 1 with a concomitant reduction in the risk of blood-borne diseases transmitted via transfusion.(3)

The current pheresis machines can also significantly filter out the donor's white blood cells which reduce exposure to certain viruses such as CMV which are known to reside in white blood cells.(4)

Furthermore, the potential for transfusion-associated reactions, particularly febrile, nonhemolytic reactions, is proportionately decreased because of the relatively diminished exposure to allogeneic human leukocyte antigens (HLA). This, in turn, decreases the likelihood of developing immune mediated antibodies to HLA antigens resulting in a more stable, compatible transfusion product with a diminished



Figure 2. HM1 Noel Arquero and HM2 Adrian Whittingham attending to HM2 Benjamin Kelley during platelet pheresis in the sick bay aboard USS *Holland*.

potential for developing a refractory state to subsequent platelet transfusions. This is important since trauma cases involving massive transfusion usually require repeated platelet transfusions.

Additionally, one unit of pheresis-derived platelets yields greater than 3×10^{11} platelets which is on the order of at least five to six times the quantity generated from an equivalent unit of random platelet concentrates which is 5×10^{10} platelets. In the clinical setting, this translates into an incremental augmentation of the patient's platelets by approximately 30,000-60,000 platelets/mL/M² for each platelet pheresis unit as compared to 5,000-10,000 platelets/mL/M² per unit of platelets generated from random whole blood donation.(5)

From a military contingency perspective, particularly combat readiness, the utilization of mobile platelet pheresis adds significantly new dimensions of flexibility and efficiency. Utilizing the current system, a large pool of on-site donors would be required in order to support a medical unit treating combat casualties. Every platelet unit which comes from a single whole blood donation necessitates an 8-week deferral per individual donor. Whereas the platelet pheresis donor, who essentially donates platelets only, is allowed to donate much more frequently. In fact, an individual can donate as early as 48 hours later, up to two procedures within a 7-day time span and up to 24 procedures per calendar year.(6)

Currently, fresh frozen plasma and red blood cell concentrates can be processed and cryopreserved by all

forward deployed Navy Blood Banks. These concentrates can be stored without significant deterioration for 1 year and 10 years, respectively. Although platelets can remain frozen for up to 3 years, their recovery rate and viability is less than 50 percent which is significantly less than frozen red blood cells.(7) As such, the use of frozen platelets is impractical for contingency purposes and is currently relegated to oncology medical centers for selected procedures with narrowly defined criteria.(8)

At present, Navy Blood Banks do not cryopreserve platelets so any operational requirements for platelets have to be satisfied given two substantial constraints, i.e., platelets are transfusable up to a maximum of 5 days after donation and must be maintained at temperature ranges between 20 and 24 degrees Centigrade. As expected, significant logistical problems are inherent in attempting to transport large number of platelet units with such a narrow temperature domain and limited shelf life. This effectively precludes any attempts to pre-position large quantity of platelets into a combat theater as we currently are able to do for fresh frozen plasma and frozen blood.

According to LCDR Michael Libby, director of U.S. Pacific Command Joint Blood Program Office, the possibility of pre-positioning platelet pheresis machines would dramatically augment blood component therapy for contingency purposes. Opting to pre-position these mobile units at different locations within the Western Pacific theater as well as on hospital ships would dramatically in-

crease the capacity to provide blood component support which is currently not available.

The delivery of efficacious trauma medical care is inextricably linked with the fundamental success of combat medicine. The importance and impact, of which, is crucial to the overall scope of military medicine. Thus advances in ancillary aspects of trauma care such as transfusion medicine are encouraging since they invariably translate into improved outcomes. In this context, the adjunctive use of mobile platelet pheresis by forward deployed medical facilities could significantly enhance our ultimate contingency mission of providing trauma medical care.

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Development of Career Navy Healthcare Professionals

LT Paul E. Huntzinger, MSC, USN

Career Navy healthcare professionals (CNHPs) are in a challenging and unique work environment in that they are triprofessionals. CNHPs are not only specialists in a medically related field, but also military officers. Further, many CNHPs are expected to execute greater managerial or administrative tasks as their careers progress. Thus, CNHPs must focus on three aspects of career development: medical specialty, military, and managerial. Figure 1 illustrates this relationship.

The first aspect necessary for CNHP career development involves the CNHP's area of specialty. Most licensed CNHPs complete several hours of continuing education (CE) and/or attend professional conferences

every year. CE and conferences, however, are only one obvious way in which CNHPs may develop their medical skills. CNHPs may also hone medical skills through publishing, presenting papers, or participating in professional seminars. The more ambitious CNHPs may apply for duty under instruction (DUINS) which includes full-time residencies, fellowships, graduate school, and other programs. NAVMEDCOMINST 1520.2A explains the application procedures for DUINS.

Before entering the military, CNHPs receive either a bachelor's or master's degree in a healthcare specialty. Although they are trained in a healthcare-centered profession, many Navy medical professionals have only a vague idea of what is entailed in being a naval officer. Officer Indoctrination School (OIS) provides basic naval officer concepts, but is clearly meant to be a stepping-stone from which the officers are intended to progress. Further, most CNHPs gain their military training post-OIS via on-the-job. The exception to this rule may be those officers who are prior enlisted or those CNHPs who had military training while in college.

In order to provide the opportunity for naval officers to develop their military skills, the Naval War College offers a graduate-level correspondence program; the other services provide similar programs. The Naval War College's



Figure 1. The Triprofessional Development Model

program consists of three courses: National Security Decision Making, Joint Maritime Operations, and Strategy and Policy. Each successfully completed course is granted five graduate college credits by the New England Association of Schools and Colleges, Inc. in economics, management, and decision making. Successful completion of the curriculum results in a Naval War College diploma (not a degree) and is available to lieutenants and above. The courses are provided free of charge, including postage for materials.

The Naval War College correspondence program is not for the faint-hearted and requires an extensive amount of reading in an eclectic array of fields. The program is currently designed to take 3 years to complete and involves the completion of essays, problems sets, point papers, and final exams or problems. For an excellent review of the various War College programs please consult the literature.* The services also offer on-site War College seminars in a wide variety of geographical locations. Table 1 lists the addresses for the service schools.

CNHPs may also attempt to develop their military skills through individual courses such as the Combat Casualty Care Course (C4) or the Fleet Hospital Operations Course. Most education and training departments should have information regarding the currently available naval training courses. Be advised that while the Naval War College's correspondence program has an open enrollment policy, individual courses rely on a selection process. Thus, the opportunity for military skill development through this avenue is limited and for some CNHPs not possible.

The third tier of professional development essential for most CNHPs concerns expanding managerial skills. Generally, as CNHPs progress through their careers they are given greater budget, personnel, organizational, and other responsibilities. In order to compliment this progression, the Navy offers a wide variety of management development seminars. More thorough management education may be obtained by becoming a diplomate through an officially recognized professional healthcare management organization or by attaining a graduate degree in a

Table 1. War College Correspondence Program Addresses

Air Command and Staff College ATTN: Correspondence Program 225 Chennault Circle Maxwell Air Force Base, AL 36112-5542
Army Command and General Staff College School of Corresponding Studies ATTN: ATZL-SWE-R Fort Leavenworth, KS 66027-6940
United States Marine Corps Marine Corps Institute Arlington, VA 22223-0001
Naval War College College of Continuing Education (Code G) 686 Cushing Road Newport, RI 02841-1207

management-related field. These two options are very time consuming, but provide a choice for professional development; thus, the CNHP has flexibility in determining what is best for his/her professional growth and goals.

One should bear in mind that at the center of CNHP career development is work performance, without which developing the triprofessional career aspects is moot. CNHPs should also note that of the three prongs of professional development only the CNHP's specialty is listed as a performance trait in the recently revised officer fitness report (NAVPERS 1610/2). This point notwithstanding, CNHPs should *ideally* develop all three aspects of their Navy career concurrently in order to become well-rounded naval healthcare officers. Due to time constraints, however, this may not be possible for most CNHPs. It is up to the individual CNHP to find the right balance for his/her career. In doing so, CNHPs will hopefully find themselves professionally challenged and increasingly effective naval officers. □

*Bergmeister FX. Warfighting by seminar. *Marine Corps Gazette*. December 1995;47-50.

When this article was written LT Huntzinger was Head, Pharmacy Department, U.S. Naval Hospital Okinawa, Japan.



CAPT Jerry M. Linenger, MC, astronaut/mission specialist

Rendezvous With *Mir*

In the predawn hours of 12 Jan, Space Shuttle *Atlantis* roared into orbit and a rendezvous with *Mir*, the Russian space station.

Atlantis' primary payload was the SPACEHAB double module. Carried aloft in the orbiter's payload bay, the module contained over 6,000 pounds of fuel, food, water, clothing, and other supplies for the *Mir* crew, as well as a pressurized microgravity and life science research facility.

STS-81's primary mission, however, was to retrieve astronaut COL John Blaha, USAF (Ret.), from *Mir*, where he had spent almost 4 months as a member of *Mir*'s crew, and drop off CAPT Jerry M. Linenger, MC, USN, who is to remain aboard the Russian space station until May.

Even as the crew transfer of Linenger and Blaha took place, the crew of *Atlantis* began conducting scientific investigations that continued throughout the 9-day mission. These investigations focused on the planned international space station, human life sciences, the effects of microgravity, Earth observations, and advanced technology, to name but a few. In one experiment, the astronauts retrieved samples of *Mir*'s environment which were returned to Earth for study. This research is designed to gather data that will be used to help determine the effects of long-duration missions on international space station crews.

Another experiment with medical implications was the Crew Medical

Restraint System (CMRS), a technique that might be required for restraining and transporting a sick or injured crewmember on board the international space station.

Other onboard investigations included the European Space Agency's Biorack that studied the effects of microgravity on plants, bacteria, and insects, and a joint U.S., Russian, and Canadian liquid diffusion experiment.

Dr. Linenger, who trained at the Cosmonaut Training Center in Star City, Russia for over a year, is the fourth astronaut/mission specialist to join Russian cosmonauts aboard the orbiting space station. This is his second shuttle flight. (See *Navy Medicine* July-August and September-October 1995.)—JKH



Shortly after arriving in orbit, Linenger works out on a bicycle ergometer device on *Atlantis*' flight deck. The linkup with the orbiting Russian space station occurred on day 3 of the mission.

Hemostats and Barbed Wire

The following is a condensed version of a manuscript written by Quintin M. Sanger. Mr. Sanger worked at the Bureau of Medicine and Surgery as a historian for many years and interviewed LCDR Ruth Pojey, NC, and LCDR Bernadette McKay, NC, after their year at the Rach Gia Hospital in South Vietnam. Here are their recollections.

One night in late September 1964 about 2300 the phone rang. MAJ Wilson told Dr. Beeby we probably would hear mortar fire at fairly close range. Intelligence predicted that the Viet Cong were going to shell the nearby provincial headquarters. Most of us were asleep and Dr. Beeby elected not to inform us. Some of us had heard the phone but when no summons came we turned over to continue our night's sleep. In about 3 minutes the room was lit up suddenly and vividly. This was followed by a loud explosion that seemed quite close. We went downstairs to determine what was going on

and were surprised by four more quick explosions. They seemed to be coming from the canal directly in front of our "Hilton." MAJ Wilson called about then and inquired, "Where are those damn mortars landing?" To which Dr. Beeby replied, "Right in our front yard!"

We were advised to remain in the house until MACV (Military Assistance Command, Vietnam) could ascertain from whence they came. We waited about 10 minutes for another call, but when there wasn't any we all decided to go back to bed. As we were about to go to sleep, Dr. Beeby called us, "Let's move out." We looked at each other, and in a split second both of us mentally packed out treasured loot and accepted the inevitable. "Move out where?" we asked. "The emergency room! Its loaded with patients!"

And so it was. When we arrived, there were some 25 patients, mostly civilians. A group from MACV came by shortly to inform us they believed that the VC mortar attack had simply

been "a little off" target. Of the approximately 25 rounds, some had landed in a populated part of the city, others near our house, and one landed on the headquarters but did little damage. In about 3 hours the victims of the mortar attack had received their indicated treatments; some cases went to surgery but most were treated in the emergency room. We were all safely tucked into bed again by 0300 but not without saying a small prayer of thanks. That had been just a little too close for comfort, but all agreed a "miss was as good as a mile."

The Assignment

In November 1963 we received official notification that, "You have been selected as a nurse member of this team." We wondered what we had been selected for, what it would be like on a team, who else had been selected. We discovered we were joining a Navy Surgical Team with LCDR James Beeby, MC; LT William Gondring, MC, USNR; CAPT Lawrence O. Bearson, NC, USAF;



A Navy nurse demonstrates an IV to South Vietnamese student nurses.

and HM2 William G. Sweeney. The group was to be loaned to the Agency for International Development (AID) to work in a South Vietnamese civilian hospital for 1 year. It was composed of two surgeons, two operating room nurses, a male nurse anesthetist, and a hospital corpsman who was a combined X-ray/laboratory technician. The team, one of eight in the country, was assigned to a provincial hospital in Rach Gia, South Vietnam. They were to acquaint the Vietnamese with some of the techniques and equipment needed to provide better

patient care for the people of their country. The State Department told us that our mission was "teach ourselves out of a job."

Our Home

Rach Gia was in the Kien Giang Province in the Mekong Delta. The majority of the natives earned their living as fishermen and rice growers, although the city had a few skilled workers. There was a 6-month hot-wet season from April onward, and a hot-dry season the rest of the year. Life centered in the city markets. Here

the team made friends at convenient opportunities, and were often greeted by "Hello" and "Okay" when they appeared in their green jeep.

Our house, which we affectionately named the "Rach Gia Hilton," consisted of two connected Vietnamese houses facing the Gulf of Thailand. The tile roof filtered out insects but did not keep out the monsoon rains. One storm caused an 18-inch flood on the first floor. The shower room was of Paul Bunyan size, but the kitchen sink belonged in a bathroom. There was one large room which

served varied purposes including entertainment of local American personnel. The "communication center" consisted of three green telephones used to keep in touch with the hospital and the U.S. MACV. Mosquito netting protected the sleeping quarters upstairs, but the bulkheads grew moss from soaking in rain. These deficiencies were gradually repaired with the help of MAJ R.D. Wilson, USA, a MACV advisor, who supplied many hard-to-get items as if by magic. The overhead French style fans were replaced by air conditioners, a normal kitchen sink was acquired, and a plastic "raincoat" was obtained to protect the refrigerator transformer against water damage. We began to refer to our "Hilton style" establishment which offered Vietnamese management and hospitality with a blend of Western comfort, excellent dining facilities, and music on request to Americans serving in the Delta. The finishing touches were 6 to 8 feet of barbed wire completely surrounding the house and three National Police guards on duty 24 hours a day.

Dr. Nguyen Phouc An, the hospital director, sent us two of his personal servants. Although a married couple, they soon became Betty Crocker (the cook) and Mr. Westinghouse (the laundry man) and enjoyed calling each other by their new American names. The No. 1 houseboy was called B. Louis, a corruption of John L. Lewis, because he was the labor boss.

Betty Crocker insisted on us eating all that she thought was good for us. After a time, in one way or another, the domestics were running us rather than vice versa. Compliance made everything so much easier. Yet the different cultures never completely meshed. We introduced green-colored items for a housewarming on Saint Patrick's Day. This was a mystery to the cook, and we soon found

ourselves receiving varicolored drinks of all kinds, as if Betty Crocker thought Americans regularly ate and drank in technicolor.

Training

The Rach Gia Hospital was a 450- to 500-bed institution and one of the few Vietnamese hospitals with a dental clinic. The team worked in the surgery department and also, especially during a large emergency influx of patients, in the emergency room. The team trained Vietnamese staff members in techniques such as anesthesia and in the use of modern equipment such as hemostats to stop hemorrhage. At first a surgical case had a team of five Americans and one Vietnamese, but later as training progressed there might be five Vietnamese and one or no Americans.

The Vietnamese were quick learners despite the language difficulties. "They were amazingly dexterous," said LCDR McKay, "at duplicating any manual skill. Their alert and willing manner never seemed to disappear." A large portion of the team's time was spent in teaching principles and practices and the use of varied types of equipment. In 6 months three Vietnamese nurses mastered surgical aseptic techniques so thoroughly that they could skillfully assist at any surgical procedure anywhere. The use of pantomime and demonstration by doing solved many sticky situations, with the help of a sense of humor on both sides. General principles seemed far more difficult for the Vietnamese to grasp, perhaps because they were not tangible as were "how-to-do" functions. A period of 1 hour every 2 weeks was used to show technical American films to demonstrate a specific technique before it was introduced on the wards.

The team's relations with their Vietnamese coworkers, doctors,

nurses, and technicians, were cordial and mutually fruitful. LCDR Pojey said, "The director and staff of the Provincial Hospital at Rach Gia readily accepted us, made us a part of their team effort; and taught us by their example and willingness to give of themselves that through mutual respect it was possible for us to gain the love and admiration of the people of Kien Gaing Province." Vietnamese learned from Americans modern skills and techniques. Americans learned from them a deep respect and admiration for the abilities of the Vietnamese people.

Our Work

Our Navy Surgical team soon learned what "mass casualty" and "this is no drill" meant at the hospital. In our first week a group of Popular and Regional Force soldiers rolled a 2 1/2 ton truck full of personnel. The team was still unpacking its surgical gear when 25 casualties arrived in the emergency room. We worked together as a team, with some mistakes and duplication of effort, but we managed very well our "baptism of fire." Gradually we developed a "disaster plan" which worked quite effectively and with a little trial and error could cover almost all contingencies.

From 500 to 600 patients were seen every month in the emergency room. This room was also an admission room, minor surgery clinic, cast room, blood drawings room, and triage center during mass casualties. Normally there were two tables used for changing dressings, examining patients, and applying casts. The number was increased to five during emergencies. Duty there was a combination of battle aid station, pediatrics clinic, and typical hospital emergency room in a large city. In several mass casualty situations from 35 to 140 patients were examined and treated in this area.

A Navy doctor/Vietnamese nurse team discuss an injured civilian's treatment. Unfortunately, this accident victim will lose his leg.

Mortar and bullet wounds, burns from bomb blasts, lacerations, and abscesses were the most frequent type of injury seen. When many patients were waiting to be treated the entire crews of the operating room and emergency room, plus the administrative personnel, centered their initial activities there. The patients were bathed, X-rays evaluated, and further disposition made, all in this one room.

Our supplies were often short, our means of replenishing them often nonexistent, and our (at first) one autoclave was especially overworked. The first Vietnamese words the team learned were Kong Co and Het Roi—meaning “have not got” and “all gone.” The team’s supply officer performed a minor miracle to preclude the constant use of these words. Support of any advisory or surgical team in Vietnam was a thankless, frustrating assignment. Supplies and every last bit of equipment had to be flown from a central warehouse in Saigon. Cargo planes that were expected to bring the ordered supplies were often diverted elsewhere to satisfy direct military needs. Those that did make the trip often faced VC attacks at the Rach Gia airfield, and some had to abort. When they did arrive vigorous efforts by many staff members and laborers had to be made to unload, transport, and unpack the material in the shortest possible time. Opening a package with a critically needed item was very much like Christmas morning with delighted oh’s and ah’s from both Vietnamese and Americans. When supplies did not arrive in time, the team showed its traditional Navy talent for improvisation.



The Vietnamese Experience

Past and present merged on the wards. The patients (commonly two to a bed in Vietnam except at Rach Gia) slept on wooden slats covered with a straw mat but could be receiving an intravenous through an intracath. All beds were covered with mosquito netting at night. Their frames served as a more than adequate intravenous pole by the simple addition of a bent nail to hold the IV bottle. Old alcohol burners and pots

for boiling syringes were discarded in favor of a syringe exchange system initiated by central supply. Dressing carts were introduced, along with individual suture removal and dressing sets to improve the old method of changing dressings.

When a patient was admitted to most Vietnamese hospitals, his family assumed responsibility for his meals while he was under treatment or recovering from surgery. A member of one’s family prepared the food

and served it to the son, daughter, wife, or husband on the ward. However, at Rach Gia the hospital provided food service to most patients and the help of the Catholic Sisters provided a dietary service.

The laundry service was an intriguing operation. There were no washing machines or dryers. The clothes were gathered and washed by many hands and hung outside on bushes and shrubbery to dry during both the dry and wet seasons. Often the pajamas and linen attracted insects from the shrubbery so the possibility of "ants in the pants" might often give unrest to the patient and disturb the quiet healing atmosphere expected in a hospital. However, this did not seem to bother the Vietnamese.

Never a Dull Day

The most memorable experience of the year occurred during a 36-hour period when 160 patients were admitted and 27 major surgical procedures were performed. At 1000 an American helicopter gunner walked in with a through-and-through gunshot wound of the face. He had been aboard a "cover chopper" for a "dust-off" (air evacuation chopper) that had gone in to pick up three casualties about 20 kilometers from the hospital. The soldier had a minor wound, but a spectacular message, "You may be a little busy 'cause there was one hell of a fire-fight going on down there, Doc."

The wounded began arriving at 1130 in trucks, ambulances, and choppers in groups of 3 to 10 until 1500 the next afternoon. Luckily we had two extra surgeons on hand and split up two operative teams, with two surgeons, two Vietnamese nurses, and one American anesthetist and one Vietnamese anesthetist on each of the two teams. Dr. Beeby, as the triage

officer, sorted out the casualties, determining which had priority and what treatment or surgery was required. Dr. Gondring did minor procedures in the emergency room. LCDR Pojey worked with two Vietnamese nurses in the operating room replacing gear that was being used in both the operating and emergency rooms; LCDR McKay circulated between the two operating rooms and the recovery room. HM2 Sweeney and Mr. Troy worked as an X-ray team. The whole group worked extremely well with little duplication of effort. One member said, "Everyone had his job, did his job, and stayed at the job until every patient had been seen and treated." The next day they were not too energetic but they felt pride in the job they had done under less than optimum circumstances.

Meanwhile, the daily surgical cases included the quite unusual. To list the surgical procedures performed during the year would be to write a text on "What Had Happened That Just Couldn't." The surgeons operated on patients with types of surgical pathology that seemed unbelievable to us. They removed bladder stones the size of "boulders," took out a spleen that weighed one-tenth as much as the child that walked around with it, removed parotid tumors that had been present for from 2 to 17 years, and almost any piece of intestine that was removed contained some species of worm parasites. Often the surgeon had difficulty in finding an area free of worms so he could apply a Payr clamp to resect the bowel. Thyroid glands weighed pounds rather than ounces were more usual than unusual. More than 100 surgical procedures were performed a month and each team member acquired a unique slide collection of their most memorable pathologies. The specimens were sent to the Pasteur Institute in Saigon for

pathological examination and a report sent back to the hospital for filing.

The War

The team was not unaware of, nor indifferent to, the political situation in Vietnam. On some occasions members of the Viet Cong came to the hospital for treatment. They were not turned away but were treated as anyone else in need of attention. In fact, we knew we had really arrived when a VC hospital in another province referred a patient to Rach Gia. Impartial medical attention was also given to both Christian and Buddhist patients who applied for treatment. It would appear that this policy was especially notable because Buddhist Vietnamese have often charged they have been discriminated against in the troubled politics of the country.

Probably our most effective role was in helping the South Vietnamese people. Our presence and capabilities quickly spread by word of mouth throughout the countryside. According to the American advisors in the surrounding hamlets, the Navy Surgical Team was their "ace in the hole." One District Chief explained that the most frequent request made of him was for transportation to come to Rach Gia to see the American doctors. This aided the larger war effort in two ways. First, assurances of medical care by Americans improved relations between our advisors and their sometimes reluctant Vietnamese counterparts. Second, the fact that the Vietnamese government representative and his American advisor could provide an individual with needed medical care for himself or his family, a certainty he could not receive from the Viet Cong, was at times the factor that persuaded the men to support the Saigon government rather than communist rebels. □

In Memoriam

RADM David P. Osborne, MC (Ret.), a surgeon and once commanding officer of the National Naval Medical Center, Bethesda, MD, died 23 Nov 1996 after suffering a stroke. He was 81.

Dr. Osborne was born in Bradford, PA, on 20 Feb 1915. He attended Pennsylvania State College, where he received his B.S. degree in 1938. Three years later he was appointed an ensign in the Naval Reserve and, following graduation from Temple University School of Medicine in 1942, reported for active duty as a lieutenant (jg) at Naval Hospital Philadelphia, PA, where he began his internship.

In 1943 Dr. Osborne was assigned to the Naval Dispensary, NOB, Key West, FL, and in December of that year became the Medical Officer of Commander LCI (L) Group Thirty-four and participated in the Invasion of Normandy.

From 1945 to 1949 he was a resident in surgery at Naval Hospital Philadelphia and, after service afloat which extended to 1951 as senior medical officer of USS *Roanoke* (CL-145), he returned to Naval Hospital Philadelphia for duty on the surgical staff. From 1954 to 1956 he was assigned to Naval Hospital Memphis, TN, when he then transferred

to the National Naval Medical Center, Bethesda, MD. There he served as head of the senior officers quarters surgical section, chief of surgery, director of clinical services, and from 30 June 1967, commanding officer of the hospital.



In October 1969 he became Inspector General, Medical, at the Bureau of Medicine and Surgery. In August 1971 Dr. Osborne was designated Assistant Chief of the Bureau for Personnel and Professional Operations. From 1973 until his 1975 retirement he served as Deputy Surgeon General, Bureau of Medicine and Surgery.

Dr. Osborne was a diplomate of the American Board of Surgery and a fellow of the American College of Surgeons. His military awards include the Legion of Merit,

Meritorious Service Medal, Navy Commendation Medal, American Campaign Medal, European-African-Middle Eastern Campaign Medal with star, World War II Victory Medal, Navy Occupation Service Medal, Europe Clasp, and the National Defense Service Medal with bronze star. He was also awarded the Naval Order of Merit, Second Class by the Government of Venezuela and the Distinguished Alumni Award from Pennsylvania State University.

Diagnosis and Management of Sexually Transmitted Diseases: A Training Program for Providers

CDR Billy G. Redmond, MC, USN
CAPT Kathleen Fischer, MC, USN

Despite the threat of HIV and AIDS, massive public education programs, unit-level teaching, and easy availability of condoms, sexually transmitted diseases (STDs) continue to be a significant health issue both in the civilian and military community. Recent Centers for Disease Control (CDC) surveillance data projected that there were approximately four million new cases of chlamydia and one million new cases of gonorrhea diagnosed in 1994.(1) In 1995 the Navy branch medical clinics in San Diego, CA, evaluated more than 2,600 male patients for STDs. Malone et al. reported in 1993 that during a 6-month deployment to South America, West Africa, and the Mediterranean 42 percent of the Navy and Marine Corps males on board had contact with a prostitute, 10 percent reported inconsistent condom use and 10 percent acquired a new STD.(2) Data from the 1995 DOD Worldwide Survey of Health Related Behaviors Among Military Personnel indicates that 25 percent of all Navy personnel have had an STD at least once, and less than half of all sexually active unmarried military personnel used a condom at their last sexual encounter.(3)

Medical care for active duty personnel is, by design and necessity, provided in echelons of increasing capability. Because patients are seen at the most forward treatment facility possible, those concerned about a possible STD will usually be seen at the battalion aid station, ships sick call, or at a branch medical clinic. They may be seen by a residency-trained

physician, a general medical officer (GMO), diving medical officer (DMO), flight surgeon (FS), physician's assistant (PA), or independent duty corpsman (IDC). Each of these providers may come to their duty assignment with differing levels of experience in the diagnosis and treatment of STDs and with varying comfort levels and experience in coun-

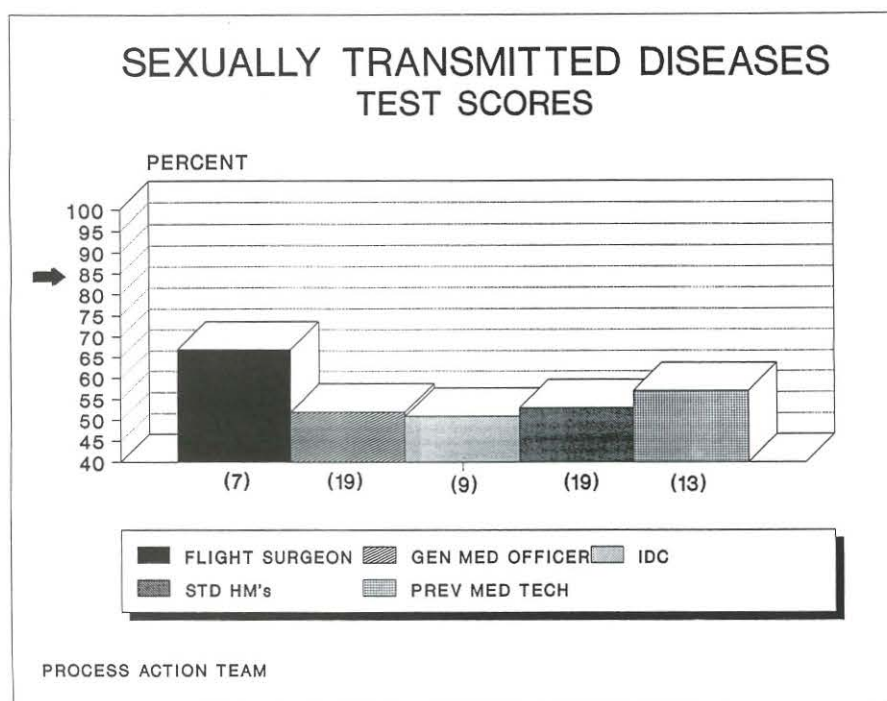


Figure 1

selling patients on high-risk sexual behavior.

For instance, in most Navy training programs, interns will see few if any males with STDs, since these patients are almost always seen and treated at the unit level. If the internship includes a rotation in GYN, they may see a limited number of female patients with symptoms suggestive of PID. Opportunities to be taught and to practice counseling patients about risky sexual behavior are rare. Studies indicate that up to 25 percent of physicians report they worry about a negative reaction from their patients while taking a sexual history. They feel uncomfortable asking questions to assess sexual risks, or they feel they are inadequately trained to take a sexual history.(4,5)

Following internship, physicians reporting for operational tours are often assumed to have knowledge regarding evaluation and treatment of patients with STDs. In the past, most GMO training programs have dealt with STDs as clinical entities requiring some sort of antibiotic treatment, and little time was spent on discussing the optimal workup of STDs or on counseling the patient on high-risk behavior. Additionally, depending on the operational setting, laboratory support commonly available at intern training sites, such as culture and sensitivity testing, chlamydia immunoassays, and darkfield exams may not be available.

Historically, the shipboard venereal disease (VD) clinic generated a great deal of sick call business after a port call. As the cruise came to an end, VD sick call again became saturated with patients who, though they had no symptoms, had engaged in behavior that they knew placed them at risk for carrying a disease home. Enlisted members were usually seen and treated by the corpsmen or the pre-

SEXUAL RISK QUESTIONNAIRE

Answering the following questions will assist your physician in providing better care for you. **This questionnaire will be returned to you at the end of your visit and will not become part of your health record**

1. Have you been sexually active in the last 12 months? _____
2. Are you under 20 years old? _____
3. Are you 20-24 years old? _____
4. Have **you or your partner** had a new sexual partner in the last 3 months? _____
5. Have **you or your partner** had more than one sexual partner in the last 3 months? _____
6. Have you had sex in the last three months without a condom? _____
7. What form of contraception do you or your partner use? _____

If the answers to these questions indicate that you are at risk for a Sexually Transmitted Disease, your provider will recommend that you be tested for STD's.

Figure 2A—Front

**What You Need to Know About
SEXUALLY TRANSMITTED DISEASE**

____ During this visit you ~~were~~^{were not} tested for Sexually Transmitted Diseases (STD's). Many studies show that patients at risk for STD's may carry one or more STD's, and may have no symptoms. You will be notified if any of your tests were positive. You may need to return to the clinic for more treatment.

____ If you received a prescription, you need to take all the pills you received. This is very important! Even if your symptoms go away, you need to take the pills until they are gone. Do not share them with your sex partner(s). Return to the clinic if your symptoms get worse or recur.

____ You need to notify your sex partner that you have _____. You should urge them to get medical attention. Even if they don't have signs or symptoms, it is possible that they have a "silent" infection and do not know they are sick. They deserve the benefit of treatment. You need to tell them!

You should not engage in risky sexual behavior. Practice safe sex; otherwise, you could be re-infected or catch a new STD. There are only two ways to be completely safe:

ABSTAIN (Do not have sex)
MONOGAMY (When two disease free people are faithful to each other)

If you decide not to abstain or practice monogamy, then you should consider the following:

- Always insist on a condom during sex (from start to finish)
- Know your partner.
- Limit your number of partners
- Avoid mouth contact with the penis, rectum and vagina
- Do not have sex with prostitutes
- Do not have sex with IV drug users

If you have any questions or concerns, you can call Medical for advice.

Remember, AIDS is the ultimate Sexually Transmitted Disease. You are at risk! Protect yourself by using safe sex. There is no cure for AIDS—only PREVENTION.

Figure 2B—Back

ventive medicine technicians aboard the ship. The officers would frequently be seen by their medical officer separately. Unfortunately today the situation has changed little. Given the option, the GMO in a fleet unit or branch clinic seems ready to permit the corpsman to see the STD patient, do the necessary tests, and fill out the prescriptions to be signed by the physician. Little attention is paid to educating and counseling the patient on the consequences of their risky sexual behavior.

In 1990 a Process Action Team (PAT) was formed at Naval Medical Center San Diego, CA, to identify factors which hindered caring for patients presenting to branch medical clinics in the San Diego area with symptoms of or concerns about STDs. During the process discovery several important facts were uncovered:

- Medical providers overall were not adequately educated on the evaluation and treatment of STDs. A multiple choice exam administered to evaluate the knowledge base of providers revealed average scores below 60 percent (Figure 1).

- Patients presenting with complaints of a possible STD after normal working hours were triaged and instructed to return, often up to 72 hours later.

- The STD programs varied widely from clinic to clinic.

In an effort to standardize the approach to evaluating and treating patients who present with a possible STD, and to ensure the providers were able to give consistently high-quality care, the PAT developed a set of algorithms for acute male urethritis, persistent male urethritis, and genital ulcers. The algorithms were developed based on CDC guidelines, literature review, and consultation with

SEXUAL RISK SELF ASSESSMENT

Answering the following questions will assist you in assessing your risk for having an STD and to help you determine if you should be tested for an STD.

1. Have you been sexually active in the last 12 months? _____
2. Are you under 20 years old? _____
3. Are you 20-24 years old? _____
4. Have you had a new sexual partner in the last 3 months? _____
5. Have you or your partner had more than one sexual partner in the last 3 months? _____
6. Have you or your partner had sex in the last three months without a condom? _____
7. What form of contraception do you or your partner use? _____

Self-Scoring Key

If you checked NO to #1 then your risk of having an STD is low
 If you checked YES to #1 and #2 then you are at increased risk for an STD
 If you checked YES to #1, #3, and #6 and YES to either #4 OR #5 you are at increased risk for an STD
 If you checked YES to #1, NO to #2 and #3, and checked YES to #4, #5, and #6 then you are at increased risk for an STD
 If you checked YES to #1 and did not fill in #7 you are trying to make a baby

If the answers to these questions indicate that you are at risk for a Sexually Transmitted Disease, you should contact Medical to be tested

Figure 3A—Front

subject matter experts. CAPT Bill Berg, MC; CAPT Kathleen Fischer, MC; and LCDR Gail Regan, MSC (Ret.), implemented an educational seminar aimed at the GMO, FS, DMO, IDC, PA, and STD corpsman. The 4-hour course presented the algorithms to be used when evaluating patients and the importance of trying to reduce the risk of infection, by discussing with the patient changing the risky sexual behaviors. Case study scenarios were distributed to the students to be worked out in small group discussions, to including the desired laboratory tests, interpretation of the re-

sults, diagnosis, treatment options based on current CDC recommendations, and finally the behavior modification messages that providers should be sending to the patient in each scenario. The first seminar was presented in 1992 and was repeated at various intervals to provide ongoing training to fleet and shore medical officers on the east and west coast.

In 1995 the task of developing algorithms for females was undertaken by the authors. The approach was similar, in that the chief complaint was the starting point for each algorithm with input from CDC guide-

What You Need to Know About SEXUALLY TRANSMITTED DISEASE

— Many studies show that patients at risk for STD's may carry one or more STD's, and may have no symptoms.

— If you received a prescription for an STD, you need to take all the pills you received. This is very important! Even if your symptoms go away, you need to take the pills until they are gone. Do not share them with your sex partner(s). Return to the clinic if your symptoms get worse or recur.

— If you are diagnosed as having an STD, you need to notify your sex partner. You should urge them to get medical attention. Even if they don't have signs or symptoms, it is possible that they have a "silent" infection and do not know they are sick. They deserve the benefit of treatment. You need to tell them!

You should not engage in risky sexual behavior. Practice safe sex; otherwise, you could be re-infected or catch a new STD. There are only two ways to be completely safe:

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Limit your number of partners

Avoid mouth contact with the penis, rectum and vagina

Do not have sex with prostitutes

Do not have sex with IV drug users

If you have any questions or concerns, you can call Medical for advice.

Remember, AIDS is the ultimate Sexually Transmitted Disease. You are at risk! Protect yourself by using safe sex. There is no cure for AIDS—only PREVENTION.

Figure 3B—Back

lines, current literature, and subject matter experts. Algorithms for vaginal discharge and lower abdominal pain with or without vaginal bleeding were developed. Additionally, because gonorrhea may be a silent infection in up to 85 percent of infected women and chlamydia may be asymptomatic in up to 65 percent of those patients,^(6,7) an algorithm for asymptomatic females was developed. Active duty females undergo a pelvic exam and PAP smear on an annual basis. This presents an opportunity for the physician to address the possibility of asymptomatic infections in patients who are at risk of having an STD, and possibly slow the spread of infection to other patients by earlier

diagnosis and treatment. The female algorithms were used for the first time in the seminar during a presentation of this course at the Naval Environmental Health Center conference in March 1996.

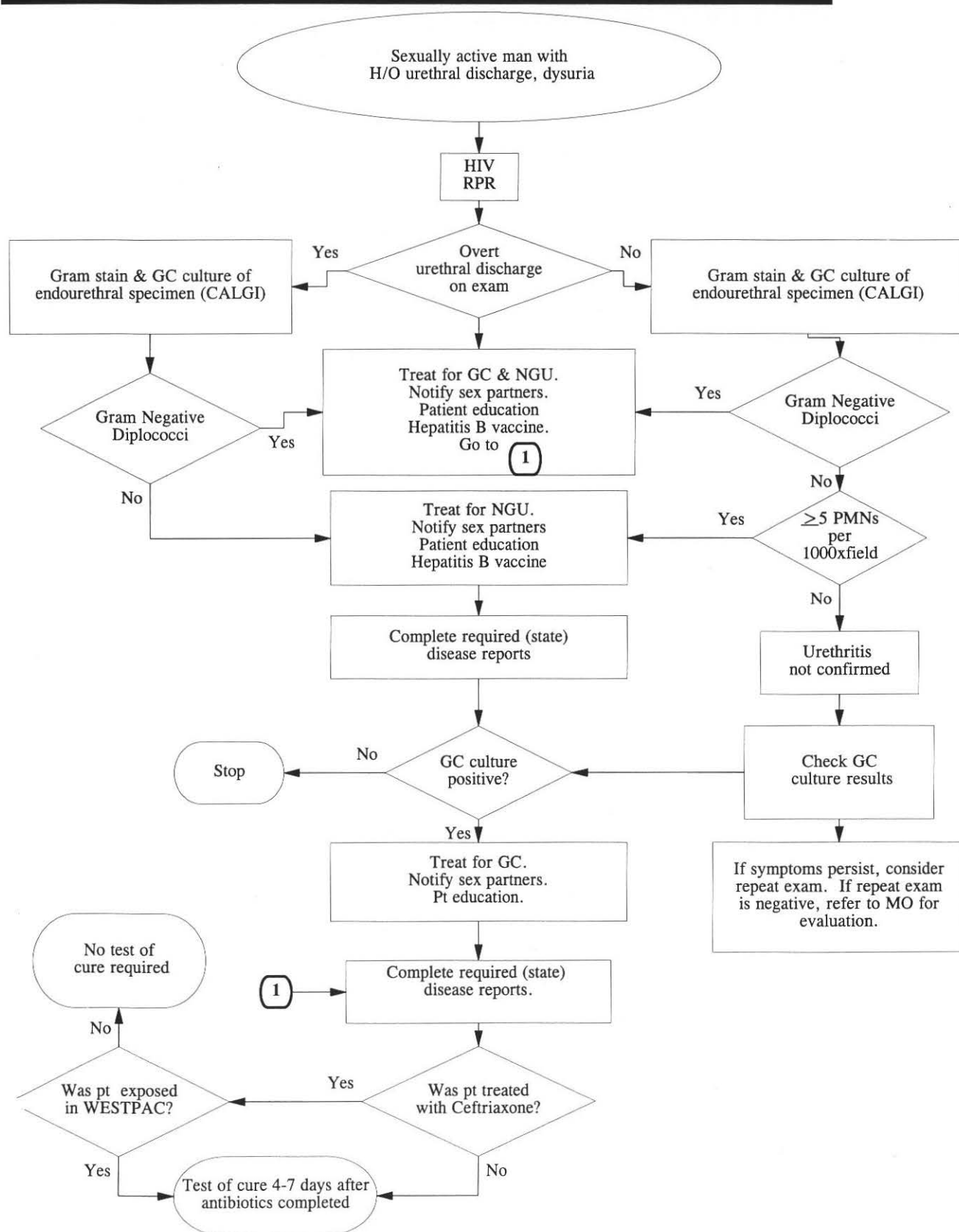
It must be remembered, the goal of the course and algorithms is to provide a systematic approach to the diagnosis and treatment of STDs within the context of the conditions and equipment typically available to the medical officer outside the four walls of a hospital. It was never designed to usurp the role of the gynecologist, urologist, or dermatologist in caring for these patients. The approach that was taken in evaluating the patient might indeed differ from the approach

that a specialist in a larger facility might prefer. However, the GMO is frequently assigned to clinics, facilities afloat, and deployed medical units hundreds or thousands of miles from the nearest specialist and with limited equipment and medication. The course provides the medical officer with a rapid, effective approach to patients with possible STDs including emphasis on prevention of STDs and their sequelae by providing the appropriate educational messages regarding risky sexual behavior.

One of the barriers to accurate disclosure from patients on their sexual activity seems to be fear that the provider would document information that the patient might not want disclosed to others who might inadvertently see the chart, including a spouse. Figure 2 is a two-sided risk assessment questionnaire designed to assist the provider in determining the patient's risk factors for an STD. The front side of the questionnaire (Figure 2A) is filled out by the patient prior to entering the provider's office. The answers are read by the provider and the patient's risk factors are discussed, but the patient retains the questionnaire and it does not become a part of the medical record. The provider determines from the answers given whether the patient is at increased risk for an STD. This determination is later used as part of the evaluation in appropriate algorithms.

The back side of the questionnaire (Figure 2B) is designed as an educational handout. After evaluation is completed and a diagnosis is made, the physician can review with the patient several important items regarding their disease. The handout stresses the possibility of co-infection with additional STDs, compliance with the medical regimen, notification of sex partners, and reducing risky behavior. (*con. on page 27*)

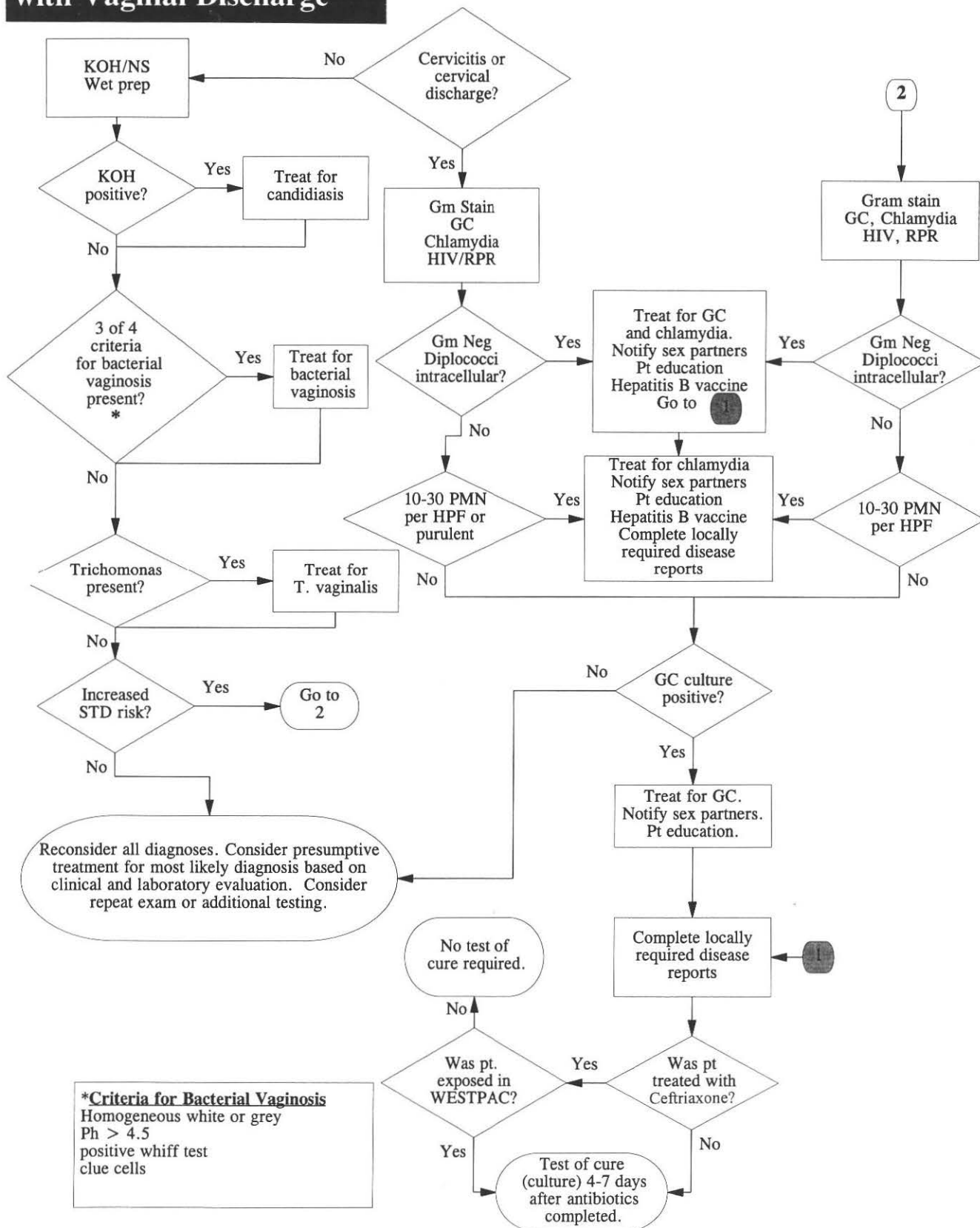
ALGORITHM FOR ACUTE MALE URETHRITIS



ALGORITHM FOR PERSISTENT MALE URETHRITIS (*if recurrent symptoms, evaluate as first episode)



Sexually Active Female with Vaginal Discharge



Primary prevention strategies are directed at behavioral changes to reduce the risk of transmitting or acquiring infection, and identifying and treating people with infection before they infect others.⁽⁸⁾ The U.S. military is, in general, a young, sexually active population. Because up to 85 percent of females with an STD and up to 25 percent of males with an STD may be asymptomatic, it is important to try to identify, diagnose, and treat those patients who are at high risk for having an STD but who are without symptoms. Active duty females receive an annual pelvic exam and PAP smear. Testing each of them for gonorrhea and chlamydia routinely is prohibitively expensive. Giving each patient, as part of their annual exam, the STD Risk Questionnaire (Figures 2A and 2B), affords the provider and patient an opportunity to assess the patient's risk for having an STD and to test for an STD if the patient is at risk. It can also open dialogue between the patient and the provider to address risky sexual behaviors.

Because there is no equivalent of the annual pelvic exam for males, screening is more difficult. Asymptomatic males, even when informed that they have been exposed to an STD will often not go to a provider to be evaluated, reasoning that since they don't have symptoms, they must not have the disease. Opportunities exist however for the provider to screen male patients who are at increased risk. Taking a sexual history should become a routine part of the history and physical on every patient. Just as the patient is queried about tobacco

use, alcohol use, illicit drug use, the patient should also be asked about sexual behaviors that put their health at risk. Screening can also be done by providing the male patient with the same educational handout and risk questionnaire (Figures 2A and 2B) when he checks in to be seen for other medical problems.

On a larger scale, educating personnel at the unit level can afford the opportunity to screen for high-risk behavior. Unit medical officers are frequently asked to provide a lecture on STDs during safety stand downs, indoctrination courses for new arrivals, and during annual training. As part of the lecture it is necessary to get the audience to look at their own behaviors and methods for modifying behaviors to reduce the risk of acquiring an STD. Figures 3A and 3B is a modification of the original risk questionnaire that allows the reader to self-score the questionnaire. It recommends that they see their medical officer if they are at increased risk.

The educational seminar for providers spends significant amounts of time in role-playing, having the students counsel the patient (played by one of the instructors), for this is often the most uncomfortable and most neglected part of treating STDs. During the PAT process, it was discovered that if counseling was done at all it was frequently left to the corpsman, even though he was often an E-4 or below and often younger than the patients he was trying to counsel. It was frequently heard from the providers that they did not have the time to counsel STD patients. They would hardly say the same about a patient they treated for hypertension, cardiovascular disease, or a sports injury. For the hypertensive patient, time should be taken to discuss their disease, lifestyle modifications, and medications. Should any less be done

for the 12 million new patients who present with a sexually transmitted disease each year?

Changing behavior that affects the health of patients begins in the office of the provider. Just as a discussion about tobacco use affords the provider with the opportunity to assist the patient in smoking cessation, so also asking the patient about their sexual risk factors affords the opportunity to assist them in changing behavior that is just as risky to their health. The educational side of the health risk questionnaire provides an easy outline for the provider to follow when counseling the patient. Changing the behavior patterns of patients must begin with changing the behavior patterns of the providers who see and treat them on a daily basis.

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In March of 1996 a briefing on the seminar was presented to many of the specialty advisors for Navy operational medicine. The course, including instructor guides, is being made available to them for inclusion into their respective training courses and for possible inclusion in the OPMED courses for Navy interns. The algorithms will also be included in the next version of the GMO manual.

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Naval Medical Research and Development Command Highlights

●Field Medical Surveillance System Model

During WWII over 55 million man-days were lost from duty as a result of infectious diseases. During Operation Desert Shield/Storm large outbreaks of diarrhea illness occurred in U.S. troops with incidence rates exceeding 10 percent of the force strength each week in some units, and it was estimated that during the first month of the operation at least 50 percent of all troops were affected. A research team at the Naval Health Research Center, San Diego, CA, is developing a model Field Medical Surveillance System to detect emerging health problems during combat conditions. Using an interface specific to military requirements, the system will incorporate GIDEON, a well known medical data base. GIDEON is the product of more than 13 years of intensive collaboration between specialists in infectious diseases, epidemiology, microbiology, biostatistics, and computer sciences. The first four program modules will focus on diagnosis, epidemiology, outbreak investigation, and surveillance. When complete the system will have the ability to detect and monitor medical problems as they occur. With the development of portable computers and advanced communications this system will be available for use in the operational theater. For infectious diseases, early warning provided by surveillance systems allows field commanders time to start various control activities. These activities may include isolating infective cases, immunizations, spraying pesticides, chlorinating wells, restricting food-handlers, and eliminating sources of open water.

●Researchers Develop Tactile Interface to Improve Situational Awareness

Spatial disorientation (SD) is a triservice problem that costs DOD in excess of \$300 million annually in lost aircraft. In aviation, SD occurs when pilots incorrectly perceive the attitude, altitude, or motion of their aircraft. The typical SD mishap occurs when the visual system is compromised (e.g., temporary distractions, increased work load, or reduced visibility). Researchers at the Naval Aerospace Medical Research Laboratory, Pensacola, FL, have successfully tested the novel concept that spatial orientation can be continuously maintained by providing information about aircraft position to the pilot through the sense of touch. The approach uses a torso harness fitted with a pattern of tactors (miniature vibrators) that continuously update the pilot's awareness of position. The Tactile System can be connected to a portable sensor, or directly interfaced with aircraft instruments. The pilot will be able to maintain orientation

without relying on vision. This device will free the pilot to devote more time to weapons delivery systems and other tasks requiring visual attention. A recently developed prototype has shown the feasibility of this approach. The Tactile System has many applications in Special Forces operations including nonaudible communication and sea, land, or air navigation. This technology has applications to many motion platforms including aircraft, remotely piloted vehicles and submersibles, and will impact all warfighting communities within DOD.

●Researchers Evaluate Pack Designs for the Marines

In continuing efforts to support Marine Corps personnel, the Naval Health Research Center, San Diego, CA, conducts laboratory and field studies to evaluate equipment and procedures. One recent effort addressed backpack design. A replacement for the All-Purpose Lightweight Individual Carrying Equipment (ALICE) pack is being considered to reduce the risk of injury caused by carrying heavy loads on the shoulders. A research team compared 13 commercially available backpacks with the ALICE pack. This comparison was based on biomechanical, physiological, and subjective measurements of active duty Marines carrying 100 lbs for 4 hours. The study concluded that certain aspects of several backpacks can be incorporated into a new backpack design including recommendations that: (1) the new backpack should include a waist belt that carries the load (shoulder straps are used only to prevent forward or backward rotation of the load) and prevents the hand-numbing effect of the ALICE, (2) the load should be carried as close to the center-of-mass as possible, so the pack frame should be as close to the back as possible, and (3) the frame needs to be strong but flexible, and the vertical frame stays should attach to the waist belt on the sides of the hip rather than the lower back (minimize lower back injury). The most important finding focuses on the fit, and the key measurement is the torso length (from top of shoulders to the top of hips). Any new backpack design must incorporate carriage of war-fighting supplies. The development of a new backpack will reduce injury associated with carrying heavy loads on the shoulders and enhance maneuver and sustainment on the battlefield.

For more information on these and other research efforts contact Doris M. Ryan, Deputy Director, External Relations, at DSN 295-0815, Commercial 301-295-0815, E-mail ryand@mail-gw.nmrhc.nnmc.navy.mil, or FAX 301-295-4033.

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